It is recommended that observations be recorded on a sedation monitoring flow chart (Appendix 7). The sedation practitioner, or staff member designated to monitor the patient, must be in attendance at the patient's side at all times, and must be competent to recognise, and rescue the patient from any complications.

8. Personnel

Whenever a sedation is performed, there should be no less than two people present, i.e. the operator, performing the procedure, and an appropriately trained observer. If the operator also provides the sedation for the procedure, i.e. a single operator-sedation practitioner, the observer will be responsible for monitoring the patient under sedation and to assist the operator in the event of adverse events. If said operator expects of the observer to take part in the sedation, e.g. by topping up the sedation, the observer will only be responsible for monitoring the patient and providing sedation as requested by the operator. The observer will not be able to assist with the procedure and the operator takes full responsibility for the sedation as well as the procedure. This situation is only recommended for brief, minor procedures.[5]

For all other procedures, a three-person model is suggested:

- the operator,
- an assistant to the procedure, and
- a dedicated sedation practitioner.

8.1 The sedation practitioner (SP)

8.1.1 Qualifications and training requirements

Relevant qualifications and regular updating of knowledge and skills remain the foundation of safe sedation practice. It is recommended that the SP should:

- Have a primary, registered medical qualification.
- Have full registration with the HPCSA as appropriate.
- Have formal training in standard and advanced sedation techniques, or be able to demonstrate equivalent experience and training. Provision of audit records of safe administration of sedation drugs is also required.
- Provide evidence of regular and recent sedation-related CPD (continuing professional development) activity appropriate to the sedation techniques provided.
- Have a logbook, or equivalent, reflecting cases where sedation was done, as well as the technique used.
- Comply with SASA recommendations for safe sedation practice.
- Have evidence available of up-to-date qualifications in Basic Life Support (BLS) and Advanced Cardiac Life Support (ACLS).

8.1.2 The single operator-sedation practitioner (SP)

The term single operator-sedation practitioner defines a healthcare practitioner who provides the sedation and at the same time performs the required procedure. Since it may not be possible to pay full attention to monitoring the patient whilst performing the procedure, a second trained individual is necessary to assist the operator-SP in this role. According to the Academy of Medical Royal Colleges[5] the assistant of the operator-SP can fulfil this role for procedures less than 30 minutes.

It is recommended that the operator-SP should undertake the dual role of sedation practitioner and operator only when basic or standard sedation techniques are employed and the level of sedation does not progress beyond minimal sedation/anxiolysis. It is recommended that combinations of drugs not be administered. However, guidelines from the Intercollegiate Advisory Committee for Sedation in Dentistry[14] suggest that the operator SP can administer moderate sedation and analgesia with standard sedation techniques. An appropriately trained second person must be present throughout the procedure and must be capable of monitoring the clinical condition of the patient and assisting the operator-SP in the event of complications. This second person may have received only in-house training, including competency in airway rescue, provided that this training is fully documented.

8.1.3 The dedicated sedation practitioner (SP)

The dedicated sedation practitioner takes full responsibility for the administration of sedatives, analgesics, and/or dissociative drugs, and monitors the clinical effects of these drugs.

It is advised to use a dedicated SP:

- If the operator had no training in the administration of sedation.
- In fragile ASA II patients.
- In the elderly.
- In patients with comorbidities.
- If the procedure is expected to be prolonged.
- For complex surgical procedures.
- If advanced sedation techniques are to be used.
- For complex sedation techniques involving intravenous infusions, i.e. target controlled infusions.

SPs and operators must only undertake procedures and interventions for which they have been specifically trained and for which they have been proven competent.

Sedation practitioners (albeit single operator-SP or dedicated SP) should:

- Have a good understanding of the pharmacokinetics and pharmacodynamics of the agents that they administer, including the pharmacology of the appropriate antagonists (which should be reserved for emergency use).
- Understand the synergistic effects when combining drugs.
- Be able to recognise and manage complications associated with the drugs in use.
- Must be able to apply advanced life support techniques and manage, rescue and recover a patient who unexpectedly enters a deeper than intended level of sedation.
- Regularly audit their practice.

8.2 Observer and ancillary personnel

An observer is always required for monitoring the patient when a single operator-SP provides sedation, even for brief or simple procedures. The observer should have at least the equivalent of nursing training, and must be proficient at maintaining airway patency and the monitoring of vital signs. Such a person must be able to assist with ventilation if necessary.

All members of the sedation team must have received appropriate theoretical and supervised clinical training. Their knowledge and skills should continually be updated by way of medical education, attending in-house training sessions and airway certification as well as taking part in simulation training for the management of emergencies. In-house training can involve various innovations in the form of formal lectures, supervised clinical training, monitoring, simulation of emergencies, documentation, and recovery care. Evidence of in-house training must be documented and kept in the facility as proof of training/updating knowledge and skills which is an important medico-legal point.

All ancillary personnel must have a clear concept of their individual tasks. They must have adequate, current experience in their roles and must be involved in continuing professional development and education in order to maintain their skills.

The following tasks must be completed with every sedation:

- Pre-procedural screening, including patient evaluation, providing pre- and post-sedation instructions and obtaining written informed consent (Appendices 3, 4, 8 and 9).
- Completing the pre-procedural checklist (Appendix 11).
- Prescribing and administering sedation.
- Patient monitoring (and rescue, where necessary) (Appendix 7).
- Performing the procedure.
- Recovery and discharge after the procedure (Appendix 12).

8.3 Personnel requirements for each sedation endpoint (see 2.1)

The level of care is determined predominantly by the degree of preservation of the protective airway reflexes and the risk of respiratory depression.

8.3.1 Minimal sedation/anxiolysis

At this level of sedation the airway, cardiovascular function, and spontaneous breathing are unaffected. This level of sedation is suitable for the operator-sedation practitioner, but, in accordance with all international guidelines, there must be a second person, apart from the operator, who is responsible to help monitor the patient and help with rescue if needed. This is usually a level of sedation suitable for brief, simple procedures lasting less than 30 minutes.

8.3.2 Moderate sedation/analgesia (conscious sedation)

A level of sedation where the airway is usually maintained, cardiovascular function intact, and the patient is breathing spontaneously. For this level of sedation, the following personnel are required:

- A medical practitioner:
  - Trained in the selection, assessment and evaluation of the patient and, specifically, in airway assessment.
  - Trained in specific sedation techniques.
  - Trained in resuscitation and airway management, experienced in advanced life support.
  - With an understanding of the pharmacokinetics and pharmacodynamics of sedative, analgesic drugs, and dissociative agents, their possible synergistic effects and specific reversal antagonists. The sedation practitioner must demonstrate competency when using combinations of drugs.
  - Trained and experienced in the use of the drugs for moderate sedation and analgesia techniques.
  - With an understanding of the procedure to be undertaken: painful/non-painful, duration, requirements for immobilisation.

For procedures longer than 30 minutes it is recommended that a third person be present, an assistant to the procedure.

- A trained and dedicated observer, experienced in airway management and monitoring, is required to ensure that:
  - The patient remains conscious.
  - Respiratory function is adequate.
  - Vital signs are within normal limits.

The observer must be trained in basic life support.

For more complex procedures, where combinations of drugs are used, prolonged sedation, and in patients with comorbidities, a dedicated sedation practitioner must be present.

8.3.3 Deep sedation/analgesia

Deep sedation/analgesia is part of the sedation continuum and the standard of care must be identical to that for an unconscious patient.

It is advised that a dedicated practitioner who is trained in sedation practice and preferably with experience in anaesthesia, as well as a trained assistant be present. The sedation practitioner must have a valid advanced life support certification.

During deep sedation, intervention may be required to maintain the airway. Ventilatory efforts must be closely monitored as they may be inadequate, or even ineffective against a closed glottis.

8.3.4 General anaesthesia (GA)

GA is not part of the PSA spectrum, even though it is mentioned on the sedation continuum. Sedation practitioners must be able to rescue patients who slip unintentionally into unconsciousness.

Guidance for GA is provided in the SASA publication, *Guidelines for practice*.

8.4 Personnel requirements for sedation for adults with special needs

A **patient** with **special needs** can be defined as someone with medical, physical, psychological or social circumstances that require a different approach to treatment. Sometimes, those with special needs have physical limitations that make treatment, i.e. dental treatment, very difficult. Intravenous sedation is usually used to relieve anxiety, produce drowsiness, and offer an amnesic effect. Some patients may have to be admitted to a hospital the night before to have a sedative/hypnotic drug administered.

Sedation for patients with disabilities must only be undertaken by sedation practitioners with experience in sedating patients with special needs. It is sometimes necessary to use deeper levels of sedation in special needs patients. It may be extremely difficult to judge the level of sedation, so adaptations in treatment protocols may be necessary. Careful monitoring of the airway is mandatory. These cases should not be attempted by the single-operator SP and a dedicated SP should be employed.